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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/321,715	05/28/99	TAKEMURA Y	0756-1974

MMC1/0614
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EXAMINER	
LIN,Y	
ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 06/14/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/321,715	Takemura Etal.
Examiner	**Group Art Unit**
Yung Lin	2822

☒ Responsive to communication(s) filed on *May 28, 1999*

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-105* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-105* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *6*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-12, 14-36, 38-58, 60-81, and 83-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al (U.S. Patent 5,485,019) in view of Fu et al. (U.S. Patent 4,305,200).

Yamazaki et al. discloses a method of manufacturing a semiconductor device comprising the step of: forming an amorphous silicon film 1103 with a thickness of 750 Angstrom over silicon oxide layer 1102 and non-alkali glass (Col. 19, line 66-67; and Col. 20, line 23-28); crystallizing the amorphous silicon film 1103 by annealing at the temperature range of 500-650^0C (Col. 20, line 25-28); oxidizing the crystallized silicon film to convert to silicon oxide film 1105 to a layer of TFT in order to have very good characteristic (Col. 20, line 46-49); forming a gate insulating film of silicon oxide 1105 by CVD adjacent to the crystallized film 1103 (Col. 20, line 42-43); forming a gate electrode 1106 adjacent to the gate insulating film 1105 (Col. 20, line 58-61). Yamazaki et al. also discloses the semiconductor device comprises an active matrix liquid-crystal electro-optical device (Col. 1, line 19-20).

Yamazaki et al. does not disclose the condition of oxidizing is performed at a pressure higher than 1 atm.

Fu et al. disclose that completely oxidizing a polysilicon film 21 to silicon oxide in an oxidizing atmosphere of oxygen and steam at a total pressure of bigger than more atmosphere and temperature less than 900^0C (Col. 2, line 34- 43; and Fig. 1-3).

It would have been obvious to one of ordinary skill in the art at the time invention was made to utilize the oxidization method of Fu et al. to oxidize the polysilicon film to silicon oxide film in order to obtain very good characteristic of oxide film.

3. Claims 13, 37, 59, 82, and 98-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al and Fu et al as applied to claims 1,9, 17, 25, 33, 41, 49, 56, 63, 70, 78, and 86 above, and further in view of Wolf ("Silicon Processing for the VLSI ERA" vol. 1: process technology, Lattice Press, PP 216-217).

Yamazaki et al and Fu et al as applied above.

Yamazaki et al and Fu et al do not disclose the oxidizing step is a pyrogenic oxidation process.

Wolf disclose oxidation of silicon to silicon oxide can be performed in a pyrogenic oxidation process in order to increase the oxide growth rate ("Silicon Processing for the VLSI ERA" vol. 1: process technology, Lattice Press PP 217).

It would have been obvious to one of ordinary skill in the art at the time invention was made to utilize well known pyrogenic oxidation process in order to increase the oxide growth rate.

Response to Arguments

4. Applicant's arguments filed 04-10-00 have been fully considered but they are not persuasive.

Applicant has argued that there is not suggestion or motivation for modifying the teaching of Yamazaki et al in view of Fu et al. However, Yamazaki et al disclose that the silicon oxide film obtained by heat oxide method of the island silicon showed a very good characteristic (Col. 20, line 46-49). In addition, test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Wood, 599 F.2d 1032, 202 USPQ 171 (CCPA 1979); In re Passal, 57 CCPA 1151, 426 f.2d 828, 165 USPQ 720 (1970); In re Richman, 57 CCPA 1060, 424 F.ed 1388, 165 USPQ 509 (1970).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yung A. Lin whose telephone number is (703) 305-0244. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, can be reached on (703) 308-4940. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

YL

June 8, 2000

Mary Wilczewski
Primary Examiner